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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/732,928	12/11/2000	Nobuo Shimazu	740107-136	2305

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EXAMINER

HUGHES, JAMES P

ART UNIT PAPER NUMBER

2881

DATE MAILED: 04/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/732,928

Applicant(s)

SHIMAZU ET AL.

Examiner

James P Hughes

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 December 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☒ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Oath/Declaration***

1. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02. It appears that applicant did not include an Applicant Data sheet with the standard form submitted. The oath or declaration is defective because of the following two reasons:

(A) It does not state that the person making the oath or declaration believes the named inventor or inventors to be the original and first inventor or inventors of the subject matter which is claimed and for which a patent is sought.

(B) It does not identify the citizenship of each inventor.

### ***Drawings***

2. Figures 1, 2(a)-(b), and 3(a)-3(c) should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). These figures are disclosed as previously known on page 2, line 4; page 3, line 13; and page 3, lines 22-25 respectively. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 5 and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Nishi (6,327,022). Nishi, teaches a projection exposure method and apparatus; wherein, an electron beam proximity exposure apparatus (10) located in a vacuum chamber comprises, an electron beam source which emits a collimated electron beam (L2) (Col. 3, line 67); wherein patterns corresponding to the apertures of a plurality of masks (R1 or R2) – arranged with a distance away from each other – are formed on a mask substrate (or mask unit) (RST), are exposed on a surface of an object (W1) held and moved on a stage (WS1); wherein, a mask moving mechanism (90) which moves the mask substrate (RST), so that one of the plurality of masks is arranged on a path of the electron beam in proximity to a surface of an object (W1), and a pattern corresponding to the aperture of the one of the plurality of masks is exposed on the surface of the object with the electron beam having passed through the aperture. Further, exposure may be conducted such that each pattern exposed on the object (W1) is exposed by two exposures in which a first mask (R1) and a second mask (R2) are respectively used and the plurality of masks formed on the mask substrate (RST) comprise a set of the first mask (R1) and the second mask (R2), wherein, the mask moving mechanism (90) controls the selection of the first mask (R1) and the second mask (R2). (Col. 6, line 49 – Col.7, line 45; Col. 28, line 27 – Col. 28, line 15; and Col. 35, line 15 - Col. 37, line 55)

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and selects the first mask (R1) or the second mask (R2) to be used. Additionally, several shielding mechanisms are involved including the aperture diaphragm (59) and numerous shielding mechanisms made from Cr (26b, 27b, 29b). (Col. 6, line 49 – Col.7, line 45; Col. 28, line 27 – Col. 28, line 15; and Col. 35, line 15 - Col. 37, line 55)

Claims 2-4 and 6-8 are objected to because they are dependent on claim 1.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2-4 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishi (6,327,022). Nishi teaches a projection exposure method and apparatus as described above in section 3. However, Nishi does not explicitly disclose using a plurality of masks on the mask substrate would have portions that are thinner than others or the plurality of masks formed on the mask substance have an identical pattern.

Regarding claims 2, 4, 6, and 8, Nishi discloses the potential use of a phase shift mask (Col. 5, line 30) it would have been obvious to one of ordinary skill in the art at the time of the invention that the plurality of masks on the mask substrate would have portions that are thinner than others because it is commonly known in the art that phase shift masks – at least often, if not inherently – have portions that are thinner than other portions.

Regarding claims 3 and 7, Nishi teaches the claimed invention except for the plurality of masks formed on the mask substance have an identical pattern. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the plurality of masks formed on the mask substance with an identical patterns, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

### ***Conclusion***

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Shibuya et al. (5,851,707) teach the use of a plurality of masks with the same pattern. (Col. 7, lines 1-20) Okino (5,874,198) teaches a charged particle beam proximity exposure apparatus and method wherein, the use of a plurality of masks with the same pattern is beneficial for increasing throughput. (Col. 3, lines 20-26)

Liebmann et al. (5,923,562) discloses commonly known aspects of phase shift masks wherein some portion that are thinner than others. (Col. 2, lines 50-60) Han et al. (5,547,788) teach a mask where portions of the masks are thinner than other portions. (Claim 2, lines 5-7) Miyasaka (6,352,802) teaches a mask wherein portions of the mask are thinner than other portions. (Abstract)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James P Hughes whose telephone number is (703) 305-5675. The examiner can normally be reached on Monday - Friday 9am - 5pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Lee can be reached on (703) 308-4116. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

James Hughes  
Patent Examiner  
Art Unit 2881



April 6, 2003

**JOHN R. LEE**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2800**